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# Two New Species of the Genus *Cerithiopsis* Forbes & Hanley, 1850 (Gastropoda: Cerithiopsidae) from Brazil

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*Abstract.* This paper presents a review of the taxonomy of the species belonging to the genus *Cerithiopsis* Forbes & Hanley, 1850 from Brazil, that are characterized by the two adapical rows of nodules in each teleoconch whorl fused together on the initial teleoconch whorls, then becoming gradually separated on the subsequent ones. The following species are reported for the first time from Brazilian coast: *C. fusiformis* (C. B. Adams, 1850), originally described from Jamaica; and *C. aimen* Rolán & Espinosa, 1995 and *C. prieguei* Rolán & Espinosa, 1995, both originally from Cuba. Two new species are described: *Cerithiopsis balaustium* and *Cerithiopsis capixaba*, both from the northeast-southeast coast of Brazil. The five species have minor differences in shell shape and sculpture pattern, being easily distinguished by the protoconch sculpture: in *C. fusiformis* it is smooth, with a thin spiral keel in the middle on two abapical whorls; *C. aimen* has a similar smooth protoconch, but lacking any spiral keel; *C. prieguei* bears two thin spiral cords on adapical whorls, connected by thin axial riblets, also, the sutural area of the protoconch is microscopically granulated; *C. balaustium* has a small protoconch with small axial riblets that do not touch the suture; *C. capixaba* has an elongate protoconch with initial whorls finely granulated and subsequent ones with axial riblets that connect the suture.

Key Words: Cerithiopsidae, *Cerithiopsis*, Brazil, South America, taxonomy.

## INTRODUCTION

The genus *Cerithiopsis* Forbes & Hanley, 1850 is contains marine microgastropods belonging to the family Cerithiopsidae H. & A. Adams, 1853. Along with the family Triphoridae Gray, 1847, Cerithiopsidae composes the largest part of the superfamily Triphoroidea Gray, 1847 (Ponder & Warén, 1988; Ponder, 1998).

The characteristics used in the taxonomy and identification of species of *Cerithiopsis*, particularly the sculpture pattern, are not easily observed, and worn shells or shells lacking the protoconch are often impossible to identify (Laseron, 1951; Marshall, 1978).

There is no consensus concerning the supraspecific classification of *Cerithiopsis*. Some authors (e.g., Jay & Drivas, 2002, following Marshall, 1978) restricted the concept of the genus, adopting other generic names, such as *Joculator* Hedley, 1909, *Horologica* Laseron, 1956, *Meudax* Finlay, 1927 and *Prolixodeus* Marshall, 1978; Odé (1989) also considered *Joculator*, but at the subgeneric level. Herein, we adopted *Cerithiopsis* in a broad sense, following Rolán & Espinosa (1995) and Rolán et al. (2007). We avoided the use of other generic names, because we did not have access to soft parts or radulae, the analysis of which seems to be essential for proper supraspecific classification in this group. Rolán & Espinosa (1995) and Rolán et al. (2007) distinguished, for working purposes, "groups of species" based on color patterns (e.g., brown colour species, banded and variable colored species).

Whereas most species of this genus have three rows of nodules, equidistant or almost equidistant along the entire teleoconch, some species have the two adapical rows of nodules fused together on the first whorls and becoming gradually separated on the subsequent ones, as described for *Cerithiopsis fusiformis* (C. B. Adams, 1850), a widely distributed species in the western Atlantic. During studies on the taxonomy of Brazilian Cerithiopsidae, we found some shells that exhibit such characteristcs of teleoconch sculpture, but can be distinguished by other traits. This paper presents the description of two new species from Brazil, as well as the first, local occurrence of three other species that were originally described from the Caribbean region.

## MATERIAL AND METHODS

The material used for this paper was collected in several localities along the Brazilian coastline, and is listed

separately for each species, with the number of shells in brackets. The study was based entirely on conchological analyses. The terminology and characters used to identify the species were based on Laseron (1951, 1956), Marshall (1978), Rolán & Espinosa (1995) and Jay & Drivas (2002).

Abbreviations used: MCZ: Museum of Comparative Zoology, Cambridge; MNCN: Museo Nacional de Ciencias Naturales, Madrid; IBUFRJ: Instituto de Biologia, Universidade Federal do Rio de Janeiro, Rio de Janeiro; MNHN: Muséum National d'Histoire Naturelle, Paris; MNRJ: Museu Nacional/Universidade Federal do Rio de Janeiro, Rio de Janeiro; MORG: Museu Oceanográfico "Eliézer de Carvalho Rios" da Fundação Oceanográfica do Rio Grande, Rio Grande; MZSP: Museu de Zoologia da Universidade de São Paulo, São Paulo; REVIZEE: Recursos Vivos da Zona Econômica Exclusiva; sta: collection station number; NOAN: Navio Oceanográfico "Antares;" NOWB: Navio Oceanográfico "Professor Wladimir Besnard."

## SYSTEMATICS

### Family Cerithiopsidae H. & A. Adams, 1853

### Subfamily Cerithiopsinae H. & A. Adams, 1853

### Genus *Cerithiopsis* Forbes & Hanley, 1850

*Cerithiopsis* Forbes & Hanley, 1850. Type-species by original designation: *Cerithium tubercularis* Montagu, 1803; Recent, Europe.

**Diagnosis:** Shell of various shapes (conic to ellipsoidal), protoconchs smooth or sculptured with axial and/or spiral ridges, or finely granulated; teleoconch whorls sculptured by usually three spiral cords, crossed by axial ribs, forming small nodules, with various degrees of conpicuousness. Aperture subquadrangular to circular; siphonal canal short and oblique.

#### *Cerithiopsis fusiformis* (C. B. Adams, 1850)

(Figures 1–5)

*Cerithium fusiforme* C. B. Adams, 1850:120–121; Clench & Turner (1950:285, pl. 38, fig. 4).

*Cerithiopsis fusiforme*: Usticke (1959:42, not illustrated); Jong & Coomans (1988:46, not illustrated); Rolán & Espinosa (1995:132, figs. 2–6, 47).

*Cerithiopsis* (*Cerithiopsis*) *fusiformis*: Vokes & Vokes (1983:18, pl. 27, fig. 6).

*Joculator fusiformis*: Redfern (2001:74, pl. figs. 310A–B).

**Types:** Holotype: MCZ 186127, Caribbean Sea, Jamaica; C.B. Adams coll.

**Material examined:** The holotype and: –Pernambuco: MNHN, [2] Enseada dos Corais, 1984–1989, P. Maestrati col.; –Bahia: IBUFRJ 12906, [2] Baía de Todos os Santos, sta 56vv, 12/iv/1997; IBUFRJ 12907, [1] Baía de Todos os Santos, sta 11vv, 22/iv/1997; IBUFRJ 12908, [18] Baía de Todos os Santos, sta 54vv, 29/V/1997; IBUFRJ 12909, [9] Baía de Todos os Santos, sta 55vv, 03/iv/1997; IBUFRJ 13887, [1] Baía de Todos os Santos, 5/iv/1997; MORG 48812, [3] R. Areia, Abrolhos, i/1985, Eq. MORG coll.; MORG 48811, [1] I. Guarita, Abrolhos, ii/1987, A. Silveira and L. Laurino coll.; – Espírito Santo: IBUFRJ 12905, [1] REVIZEE sta c65 (18°53′37″S, 39°06′23″W, 50 m), 25/iv/1996, NOAN coll.; IBUFRJ 9515, [1] REVIZEE V sta c64 (19°17′42″S, 38°02′06″W, 63 m), 25/iv/1996, NOAN coll.; IBUFRJ 12903, [12] REVIZEE sta vv38 (19°44′S, 38°24′W, 71.4 m), 29/ii/1996, NOAN coll.; MNRJ 11887, [3] REVIZEE sta vv38 (19°44′S, 38°24′W, 71.4 m), 29/ii/1996, NOAN coll.; MORG 48816, [39] Aracruz, 1/viii/1988, Vera Abud coll.; IBUFRJ 12904, [6] REVIZEE sta c62 (20°30′02″S, 37°28′51″W, 96 m), 25/iv/1996, NOAN coll.; IBUFRJ 10049, [1] REVIZEE V sta c61 (20°30′38″S, 37°19′06″W, 88 m), 24/iv/1996, NOAN coll.; IBUFRJ 12900, [1] REVIZEE sta vv21 (20°38′S, 40°00′W, 33 m), 26/ii/1996, NOAN coll.; –Rio de Janeiro: IBUFRJ 13665, [3] Praia da Figueira, Angra dos Reis, 1998, C. Alvarenga coll.; MORG 41970, [1] off Macaé, sta 3207, 12/iv/1997, Oceanographic Vessel "Victor Hensen" coll.

#### *Cerithiopsis aimen* Rolán & Espinosa, 1995

(Figures 6–11)

*Cerithiopsis aimen* Rolán & Espinosa, 1995:142, figs. 27–30; Boyko & Cordeiro (2001:27).

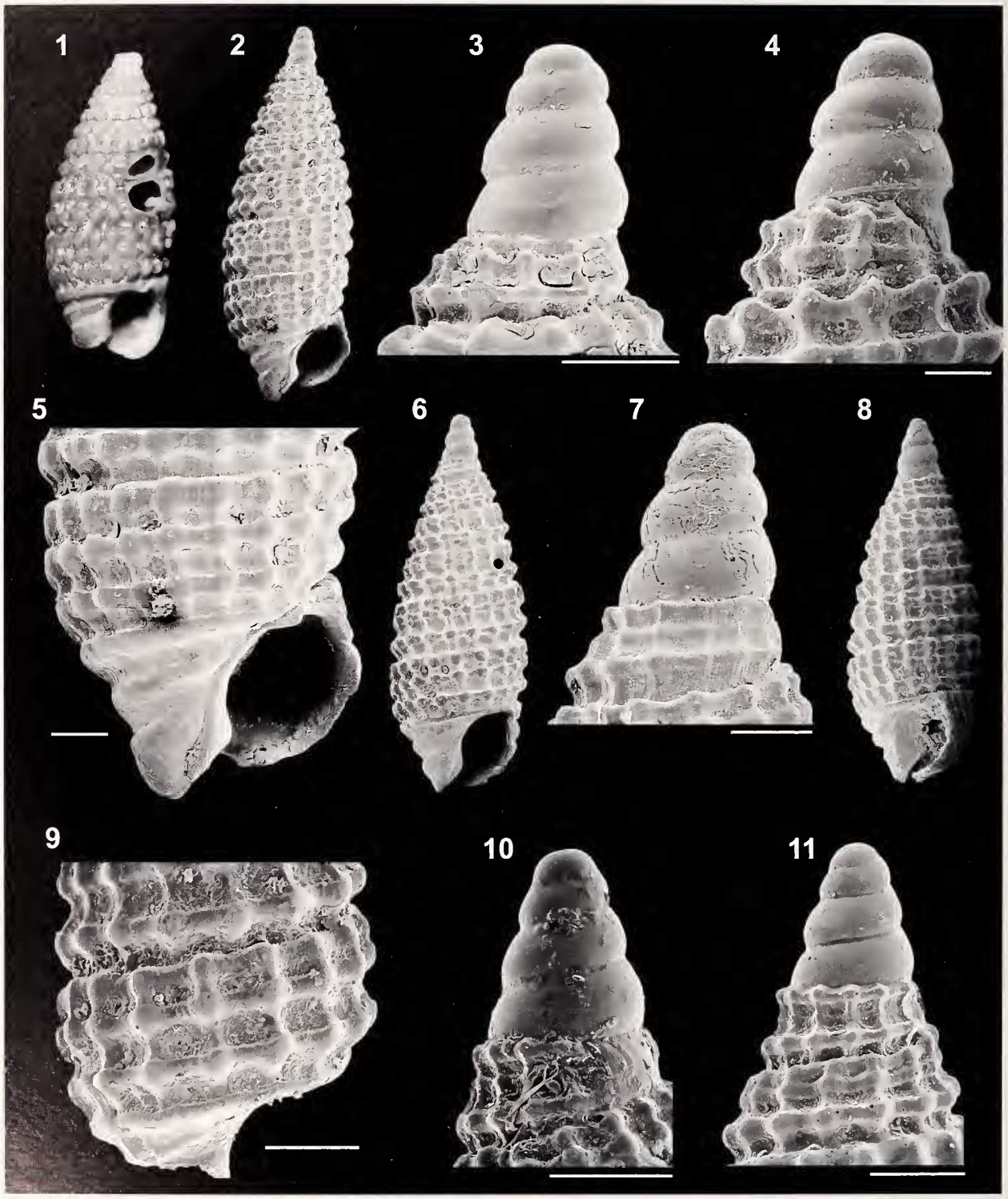
**Types:** Holotype: MNCN 15.05/17220, Cienfuegos Bay, Cuba; one paratype at AMNH 226504.

**Material examined:** The holotype and: IBUFRJ 12902, [2] REVIZEE sta vv31 (18°52′S, 39°35′W, 22.8 m), 28/ii/1996, NOAN coll.; MNRJ 11889, [1] REVIZEE sta vv31 (18°52′S, 39°35′W, 22.8 m), 28/ii/1996, NOAN coll.; IBUFRJ 15373, [1] REVIZEE VI sta y7 (77 m); IBUFRJ 15565, [1] Baía de Todos os Santos, Bahia state, 5/iv/1997; IBUFRJ 15564, [4] Baía de Todos os Santos, Bahia state sta 11vv, 22/iv/1997.

#### *Cerithiopsis prieguei* Rolán & Espinosa, 1995

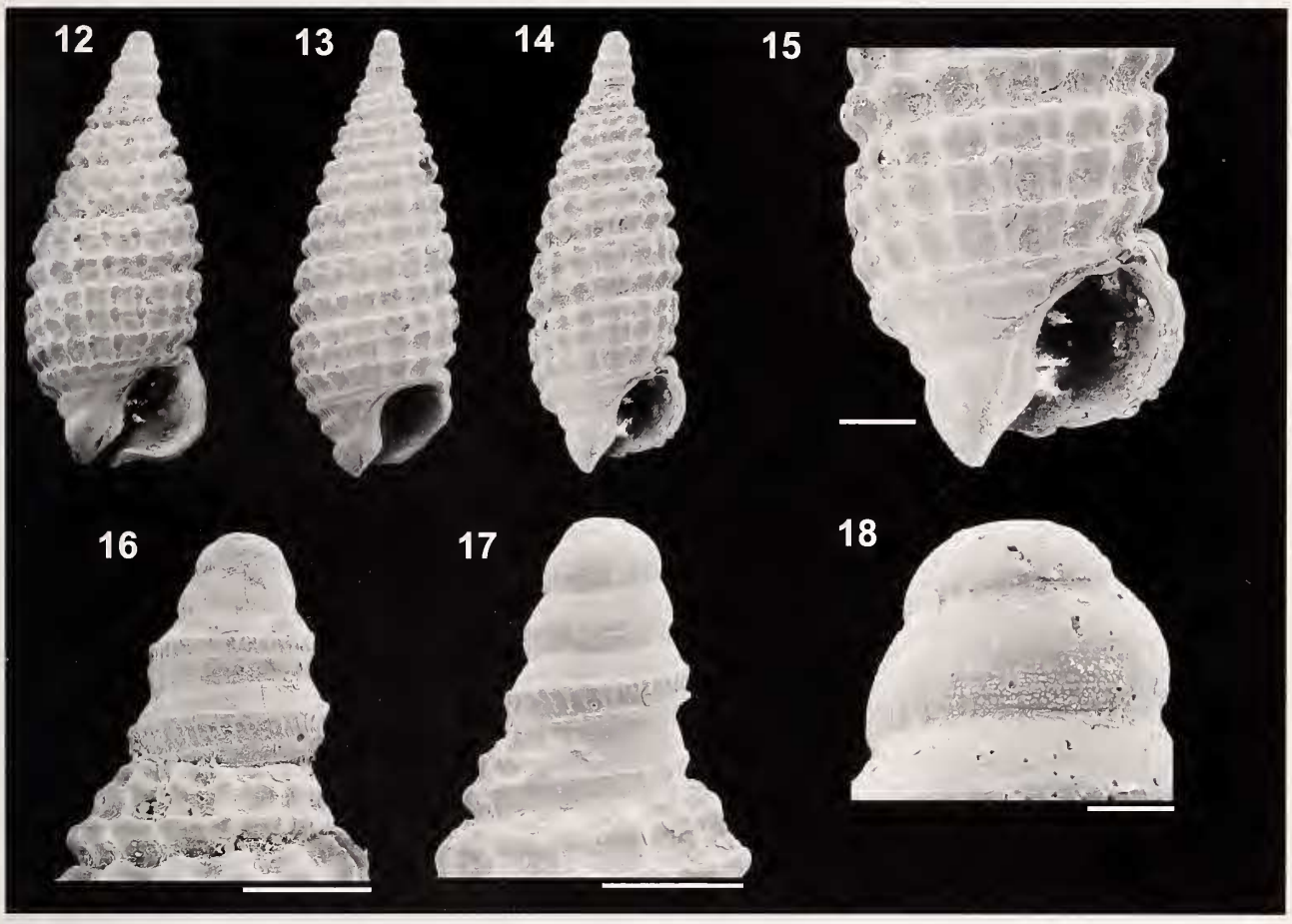
(Figures 12–18)

*Cerithiopsis prieguei* Rolán & Espinosa, 1995:142, figs. 31–34, 45; Boyko & Cordeiro (2001:28).




Figures 1–5. *Cerithiopsis fusiformis*. 1. holotype (MCZ 186127); 2–3, 5. IBUFRJ 12906; 4. IBUFRJ 12907; 1–2. whole shells (lengths: 3.0 mm); 3–4. protoconchs; 5. last whorl. Scale bars: 200 µm.

Figures 6–11. *Cerithiopsis aimen*. 6–7. holotype (MNCN 15.05/17220); 8–11. IBUFRJ 12907; 6, 8. whole shells (respective lengths: 3.2 mm, 2.1 mm); 7, 10–11. protoconchs; 9. last whorl. Scale bars: 200 µm.




Figures 12–18. *Cerithiopsis prieguei*. 12, 16. holotype (MNCN 15.05/17221); 13–15, 17–18. IBUFRJ 14139; 12–14. whole shells (respective lengths: 2.2 mm, 2.5 mm, 2.0 mm); 15. last whorl; 16–17. protoconchs; 18. detail of early protoconch whorls. Scale bars: 15–17: 200 μm; 18: 50 μm.

**Types:** Holotype: MNCN 15.05/17221, La Habana, Cuba; several paratypes listed in Rolán & Espinosa (1995).

**Material examined:** The holotype and: IBUFRJ 14139, [3] REVIZEE sta vv38 (19°44′S, 38°22′W, 71.4 m), off Espírito Santo state, 29/ii/1996, NOAN col.; MNRJ 11888, [3] REVIZEE sta vv38 (19°44′S, 38°22′W, 71.4 m), off Espírito Santo state, 29/ii/1996, NOAN col.

*Cerithiopsis balaustium* n.sp.

(Figures 19–23)

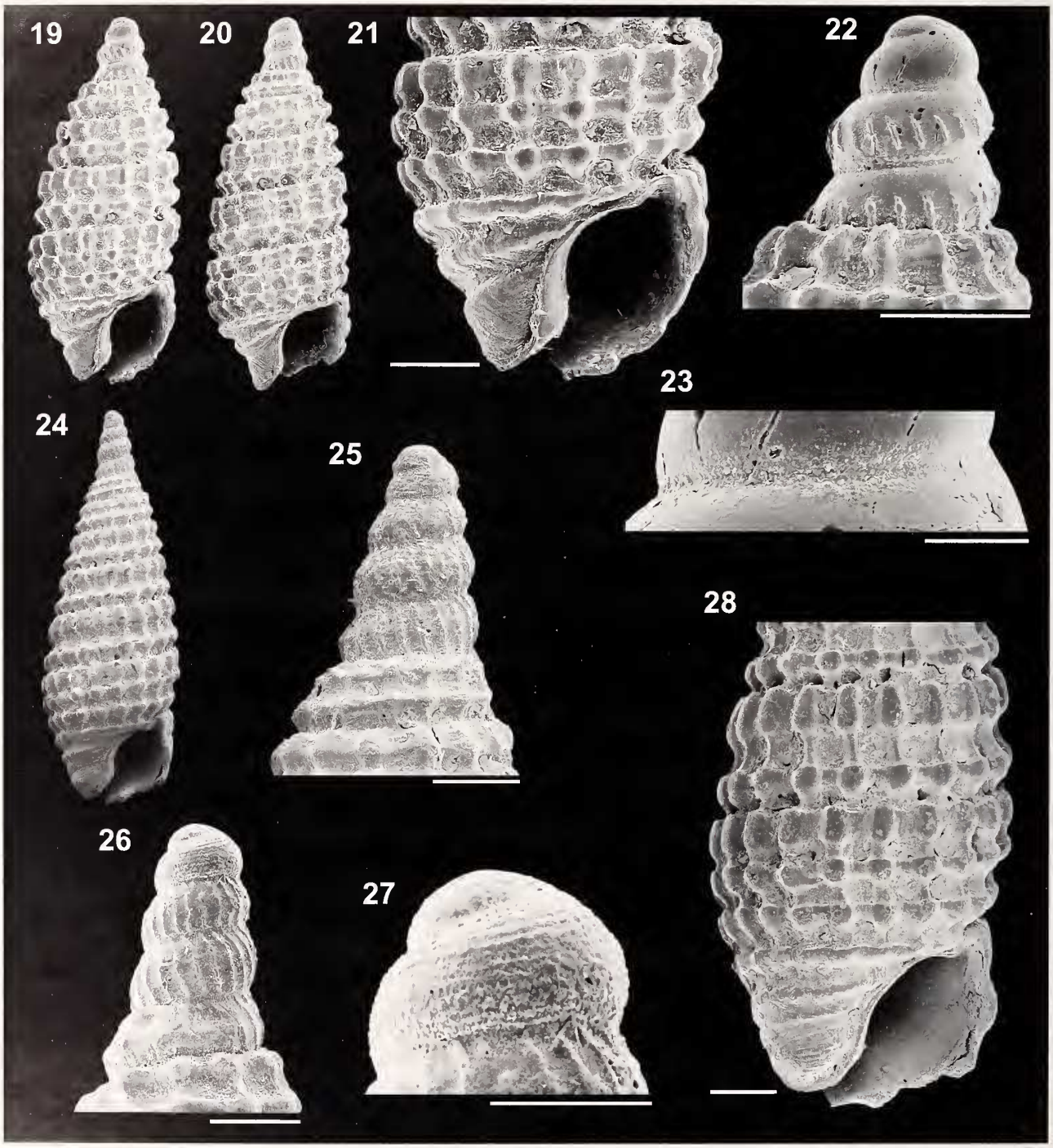
**Type material:** holotype: MZSP 86307 REVIZEE sta 6666 (24°17.129′S, 44°12.149′W, 163 m), off São Paulo state; paratypes: IBUFRJ 15223, [1] Baía de Todos os Santos, Bahia state sta 11vv, 22/iv/1997; IBUFRJ 15566, [1] Baía de Todos os Santos, Bahia state, sta 54vv, 29/v/1997; IBUFRJ 15371, [1] REVIZEE VI sta y7 (77 m); MZSP 86306 [3] REVIZEE sta 6666 (24°17.129′S, 44°12.149′W, 163 m), off São Paulo state; MNRJ 10981, [1] PADCT sta 6577 (25°15.76′S, 45°04.62′W, 124 m), off São Paulo state; MZSP 86308 [1], PADCT sta 6595 (26°23′S, 46°39′W, 175 m), off Santa Catarina state.

**Type locality:** off São Paulo state, southeast coast of Brazil (24°17.129′S, 44°12.149′W, 163 m).

**Etymology:** From Latin Balaustium = balauster. The species is named after its protoconch sculpture, whose series of axial riblets resembles the architectural elements of a balustrade.

**Diagnosis:** protoconch with small axial riblets restricted to the middle portion of each whorl, not touching the suture; first teleoconch whorls with the two adapical rows of nodules fused together and becoming separated on the subsequent whorls.

**Description:** shell small, reaching 2 mm of height, somewhat pupiform, opaque. Protoconch subcylindri-




Figures 19–23. *Cerithiopsis balaustium* n.sp. 19, 21–23. holotype (MZSP 86307); 20. paratype (IBUFRJ 15223); 19–20. whole shells (respective lengths: 1.3 mm, 1.4 mm); 21. last whorl; 22. protoconch; 23. detail of protoconch sutural area. Scale bars: 21–22: 200 µm; 23: 50 µm.

Figures 24–28. *Cerithiopsis capixaba* n.sp. 24–25, 28. holotype (IBUFRJ 15221); 26–27. paratype (MZSP 86309); 24. whole shell (length: 2.5 mm); 25–26. protoconchs; 27. detail of early protoconch whorls; 28. last whorl. Scale bar: 25–27: 200 µm; 28: 100 µm.

cal, dark yellow, with about 3.5 whorls of convex outline, the first one dome-shaped; two abapical whorls with small prosocline axial riblets which are restricted to the middle area of the whorls, without reaching the suture, except in its last half-whorl; sutural area with granules, especially on its adapical region, which become thicker and coalescent on the third whorl, forming a small spiral suprasutural cord. Teleoconch with up to five whorls; color varying from light to dark yellow. Suture well impressed. Teleoconch whorl sculpture formed by three spiral cords and about 16 axial ribs on the fourth whorl with the formation of rounded nodules on the intersections; early whorls with the two posterior cords fused together, their nodules appearing to be a single row of bilobate ones, these cords gradually separate from each other in the subsequent whorls until they are equidistant on the last one. Base short, with a slightly nodulose spiral cord on its periphery and two large spiral grooves, separated by a spiral cord, axial growth lines, and thin spiral lines in its anteriormost portion. Aperture somewhat elliptical, with a short siphonal canal. Outer lip thickened.

*Cerithiopsis capixaba* n.sp

(Figures 24–28)

**Type material:** holotype: IBUFRJ 15221, [1] REVIZEE sta vv21 (20°38′S, 40°00′W, 33 m), off Espírito Santo state, 26/ii/1996, NOAN coll.; paratypes: IBUFRJ 9275, [1] REVIZEE sta c63 (19°40′42″S, 38°08′15″W, 61 m), off Espírito Santo state, 25/iv/1996, NOAN coll.; IBUFRJ 14138, [2] REVIZEE sta vv38 (19°44′S, 38°22′W, 71.4 m), off Espírito Santo state, 29/ii/1996, NOAN coll.; MNRJ 10982, [3] REVIZEE VI sta y7 (77 m); MZSP 86309, [1] REVIZEE sta 6662 (24°00.946′S, 43°55.540′W, 135 m), off São Paulo state.

**Type locality:** off Espírito Santo state, southeast coast of Brazil (20°38′S, 40°00′W, 33 m).

**Etymology:** "Capixaba" is the common denomination given to natives of the state of Espírito Santo, in southeastern Brazil.

**Diagnosis:** protoconch with many thin axial ribs covering the entire surface of each whorl; early teleoconch whorls with the two adapical rows of nodules fused together and becoming separated on the subsequent whorls.

**Description:** shell small, reaching 3 mm of height, pupiform with a somewhat acuminate apex, opaque. Protoconch cylindrical, yellow, with about 5 whorls of convex outline, the first one dome-shaped; first two whorls with small granules organized in spiral rows, subsequent whorls with prosocline axial riblets reaching the suture. Teleoconch with up to seven whorls; color light caramel. Suture well impressed. Teleoconch whorl sculpture formed by three spiral cords and about 16 axial ribs on the sixth whorl with the formation of rounded nodules on the intersections; early whorls with the two posterior cords fused together, their nodules appearing to be a single row of bilobate ones, these cords gradually separate from each other in the subsequent whorls until they are equidistant on the sixth whorl. Base very short, with a spiral cord on its periphery and two large spiral grooves, separated by a spiral cord; axial growth lines, and spiral lines in its anteriormost portion. Aperture subquadrate, with a short siphonal canal. Outer lip thickened.

## DISCUSSION

Marshall (1978), studying the Cerithiopsidae from New Zealand, considered several genera apart from *Cerithiopsis*, such as *Joculator*, *Horologica*, *Prolixodens*, among others. The distinction among these generic names was based on a combination of teleoconch shape and sculpture, as well as on protoconch type.

In a similar way, Jay & Drivas (2002) considered several generic names, but relied mainly on protoconch characteristics to restrict the concept of *Cerithiopsis* to shells with smooth or punctated protoconchs, along with the genera *Joculator* and *Horologica*. The distinctions among these three genera were related to the general shape of the shell and the base, and the number of spiral nodulose rows per whorl. Species with sculptured protoconchs, on the other hand, were assigned to the genera *Dizoniopsis* Sacco, 1895, *Mendax* and *Prolixodens*. However, the concept adopted for some genera, such as *Mendax*, are not in accordance with those used by Marshall (1978), who regarded *Mendax* as species with lecithotrophic larval type of few (2 ½) whorls, with non-granulated earlier whorls. The species included by Jay & Drivas (2002) have 3–4 whorls (planktotrophic type), with granulated earlier whorls.

Furthermore, Marshall (1978) stated that classifications based on protoconch types do not reflect phylogeny, since there can be genera with both kinds of development (i.e., planktotrophic and lecithotrophic), reflecting different protoconch sculpture patterns.

In the absence of radular and/or anatomical data, we used *Cerithiopsis* in a wide sense to encompass both smooth or axially sculptured protoconchs, a position adopted by Rolán & Espinosa (1995). Also, we recognized no distinction between *Cerithiopsis* and *Joculator*, because the differences among them are related to general shell shape, which is quite variable in some species of *Cerithiopsis*.

*Cerithiopsis* s.l. species are generally characterized by teleoconch sculpture of three or two rows of nodulose

cords, nearly equidistant, on each whorl. In some species, however, the two adapical nodulose rows are very close to each other, and quite distant from the abapical row; in some cases, these two adapical rows may be fused in a kind of double row, or even only one row may be visible, especially on earlier teleoconch whorls. Marshall (1978) included species with this teleoconch sculpture in *Horologica*, defined as teleoconchs with two spiral cords, a third emerging by fission and subsequent development of the first spiral cord. However, Marshall (1978) himself expressed doubt as to whether *Horologica* would prove to be a subgenus of *Joculator* after eventual forthcoming anatomical data. This suggests to us that the number and disposition of spiral cords are also insufficient to discriminate among generic entities, and again, we have considered *Cerithiopsis* in a broad sense.

Typical western Atlantic representatives of the type of sculpture described above, are *Cerithiopsis fusiformis* (C. B. Adams, 1850) (Figures 1–5), from Jamaica; and *Cerithiopsis aimeu* (Figures 6–11) and *Cerithiopsis prieguei* (Figures 12–18), both from Cuba, described by Rolán & Espinosa (1995). These three species are herein reported for the first time from the Brazilian coast.

Rolán & Espinosa (1995) stated that the protoconch of *C. fusiformis* seems smooth, but has a spiral angulation in its middle and, in some specimens, an additional spiral cord near the suture. Some level of erosion may be responsible for this variation. These protoconch characters are visible in the Brazilian specimens (Figures 3, 4).

*Cerithiopsis aimeu* (Figures 6–11) can be distinguished by its smooth protoconch, which lacks any spiral sculpture (Figures 7, 10, 11). In addition, as discussed by Rolán & Espinosa (1995), *C. aimeu* also differs from *C. fusiformis* in the arrangement and relative size of the nodules on the first teleoconch whorl. The first teleoconch whorl of *C. aimeu* has three, equally spaced, nodulose rows, the middle one smallest, until the second teleoconch whorl, when the two upper rows become fused (Figures 7, 10, 11). In *C. fusiformis*, the adapical row is smaller than the other two and is already closer to the middle row from the beginning of the teleoconch (Figures 3, 4).

*Cerithiopsis prieguei* (Figures 12–18) displays the same sculptural pattern on the first teleoconch whorl (Figures 16, 17) as *C. fusiformis*. The easiest way to distinguish this species from the others is by the protoconch sculpture, which has two fine, spiral cords, with small, incomplete, oblique axial ribs (Figures 16, 17). Further, the sutural area of the protoconch has some small granules (Figure 18).

Besides the three species mentioned above, this paper presents the description of two new species, with similar shell shape and sculpture pattern. Both *Cerithiopsis balaustium* and *Cerithiopsis capixaba* have the adapical row smaller than the other two at the beginning of the teleoconch, similar to *C. fusiformis*. Particularly in *Cerithiopsis balaustium* the adapical rows of nodules are extremely close since the first whorl.

The teleoconch whorls of the species studied are very similar, though their shapes are not exactly the same: *Cerithiopsis balaustium* (Figures 19, 20) is somewhat globose and smaller than the others, whereas *Cerithiopsis capixaba* (Figure 24) is somewhat pear-shaped, and *C. fusiformis* (Figures 1, 2), *C. aimeu* (Figures 6, 8) and *C. prieguei* (Figures 12–14) are oval. Still, in our opinion, this trait is too variable and hardly sufficient to allow a proper identification of these species.

There are also slight differences in the separation of the adapical rows of nodules. In *C. fusiformis*, *C. aimeu*, *C. prieguei* and *C. capixaba*, the rows become separated in the fifth or sixth whorls only; whereas in *C. balaustium* the two fused spiral cords are already separated by the fourth whorl (Figures 19, 20).

It is clear, though, that among the conchological characters, the sculpture on the protoconch is the most reliable and conclusive when telling these species apart. All the species have protoconchs of the planktotrophic type, with four or five whorls. Marshall (1978) stated that, although not reliable for generic classification, differences in sculpturing of the planktotrophic protoconch may be used for species discrimination, because species with this larval development are usually intraspecifically constant.

The protoconch of *Cerithiopsis balaustium* has short axial cords that do not touch the suture (Figures 22, 23), whereas that of *Cerithiopsis capixaba* has five whorls, the two adapical finely granulose and the remainder with axial cords touching the suture above and below (Figures 25–27). The protoconch sculpture of *C. balaustium* is somewhat similar to that of *Prolixodens skuips* Jay & Drivas, 2002, but in this species, which occurs in the Indian Ocean, the axial riblets are more prominent; besides, the teleoconch does not have the two fused adapical rows in the adapical whorls. A recently described species from Cuba, *Cerithiopsis apexcostata* Rolán, Espinosa & Fernández-Garcés (2007) has a very similar protoconch sculpture, but in this species, the axial cords, touch the suture below, while in *C. balaustium*, the cords are, in most of the protoconch whorls restricted to the middle area of the whorl. Also, in *C. apexcostata*, the two posterior cords in the teleoconch whorls never fuse together, as occurs in the three older whorls of *C. balaustium*.

Also, for *C. capixaba*, a similar protoconch can be found in three species from the Indian Ocean, *Meudax penneyi*, *Meudax mascareneusis* and *Meudax ribesae*, all described by Jay & Drivas (2002); however, the teleoconch shapes and sculpturing are markedly

different. Rolán et al. (2007) described and illustrated the protoconch of *Cerithiopsis ara* Dall & Bartsch, 1911, with 4 ¼ whorls, the first one with spiral cords and the subsequent with axial ribs crossed by small spiral threads; this is very similar to the protoconch of *C. capixaba*, but in the species from Brazil, the spiral cords in the initial whorls are formed by small granules organized in spiral rows, and in the subsequent whorls, there are no spiral threads. The most important difference between the two species, however, is in the general shell shape, elongate and with an accuminate apex in *C. capixaba* and short and pupoid in *C. ara*.

*Cerithiopsis prieguei* has a protoconch ornamented with small granules at the sutural area of the two earlier whorls and two spiral cords connected by thin prosocline axial riblets on the two abapical whorls (Figures 16–18). The protoconchs of *C. fusiformis* (Figures 3, 4) and *C. ainnen* (Figures 7, 10, 11) are generally smooth, although on the protoconch of *C. fusiformis*, there is a small spiral keel in the middle on the two abapical whorls; similar spiral keels can be found in the protoconchs of *Cerithiopsis beneitoi* Rolán, Espinosa & Fernández-Garcés, 2007 and *Cerithiopsis dilata* Rolán, Espinosa & Fernández-Garcés, 2007.

Olsson & Harbison (1953) described *Cerithiopsis aralia*, from the Pliocene north of St. Petersburg, Florida, and stated that this species should be carefully compared with *Cerithiopsis fusiformis*. Jong & Coomans (1988) considered *Cerithiopsis brassica* Olsson & Harbison, 1953 as a synonym. We examined the holotype of *C. aralia*, and although both species are very similar, we prefer to retain them as separate taxa because we feel that additional studies are necessary to confirm the possible synonymy of species from such distant geological provenance. Although we did not examine the holotype of *C. brassica*, the same interpretation applies.

The previously known distribution of *C. fusiformis* included the Western Atlantic, from North Carolina (U.S.A.) to the Caribbean (Rosenberg, 2005); *C. ainnen* and *C. prieguei* were known only from Cuba (Rolán & Espinosa, 1995). This is, therefore, their first record from the South Atlantic. In Brazil, *C. fusiformis* is widely distributed, from the states of Pernambuco (northeastern Brazil, ≅ 8°S) to Rio Grande do Sul (southern Brazil, ≅ 30°S); *C. prieguei* and *C. ainnen* have only been found in southeastern Brazil (Espírito Santo State, ≅ 19°S). Both *Cerithiopsis balaustium* and *Cerithiopsis capixaba* are restricted to localities in southeastern Brazil: about 24°S and 20°S–24°S, respectively, with some records of *Cerithiopsis balaustium* from the northeast coast, though in a southern locality (≅ 13°S).

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